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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,915	11/20/2003	Richard Root Woods		4150
29000	7590	10/26/2006		
IRELL & MANELLA LLP 1800 AVENUE OF THE STARS SUITE 900 LOS ANGELES, CA 90067			EXAMINER SMITH, NICHOLAS A	
			ART UNIT 1742	PAPER NUMBER

DATE MAILED: 10/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/719,915	Applicant(s) WOODS ET AL.	
	Examiner Nicholas A. Smith	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8, 12, 13 and 15-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 12, 13 and 15-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/31/2004, 9/24/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election without traverse of claims 1-8, 12-13 and 15-38 in the reply filed on 8/10/2006 is acknowledged.

**Status of Claims**

2. Claims 1-8, 12-13 and 15-38 remain for examination. Claims 9-11 and 14 have been cancelled.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8, 12-13 and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lillis et al. (US 2003/0215680) in view of Goebel (US Patent 6,960,404).
5. In regards to claim 1, Lillis et al. discloses a hydrogen gas generating system, a membrane electrode assembly including an anode, a cathode and an ionically conductive membrane, and electrical connections (abstract, paragraphs [0031] and [0032]).
6. However, Lillis et al. does not specifically disclose a non-circulating fuel transport system using capillary action.

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7. Goebel teaches wicking strands that transport water by capillary action for a fuel cell (col. 2, lines 48-67). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Lillis et al.'s system with Goebel's fuel transport system in order to communicate liquid water and to maintain adequate hydration of the PEM (Goebel, col. 5, lines 53-60).

8. In regards to claims 2-7, Goebel teaches the specific characteristics of the claimed fuel transport system, including a first and second portion that are hydrophilic and hydrophobic, wherein hydrophilic portion has smaller pore size and higher capillary force (col. 4, lines 3-28, col. 6, lines 22-67, col. 11, lines 40-64, Figures 2 and 6).

9. In regards to claims 8, 12-13 and 15-20, Lillis et al. discloses the conventional components in the claims, including replaceable fuel water canister, hydrogen gas storage tank, forward regulator to deliver hydrogen gas, backpressure regulator, vent regulator, electrical connections (Figs. 1 and 9, paragraphs [0030], [0050], [0056]).

10. Claims 21-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lillis et al. in view of Goebel and further in view of Pien et al. (US2002/0110719).

11. Lillis et al. in view of Goebel does not specifically disclose a cooling system with cooling ports.

12. Pien et al. teaches a cooling system with cooling ports (paragraphs [0015] and [0030]). It would have been obvious to one of ordinary skill in the art to modify Lillis et al. in view of Goebel's apparatus with Pien et al.'s cooling system and cooling ports in order to distribute cooling fluid and cool the fuel cell (Pien et al. paragraph [0015]).

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13. Claims 29-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lillis et al. in view of Goebel and further in view of Montemayor et al. (US Patent 6,063,517).

14. In regards to claim 29-38, Lillis et al. in view of Goebel does not specifically disclose a spiral-shaped fuel cell.

15. Montemayor et al. teaches a spiral-shaped fuel cell that is generally cylindrical (abstract, Fig. 2, col. 5, lines 33-57). It would have been obvious to one of ordinary skill in the art to modify Lillis et al. in view of Goebel's apparatus with Montemayor et al.'s spiral fuel cell design in order to minimize electrical resistance losses (Montemayor et al., col. 1, lines 46-56).

16. In regards to claim 29-38, Lillis et al. in view Goebel discloses conventional features such as inlet, outlets, backpressure regulators, hydrogen gas storage tank, fuel water canisters and supply lines to fuel water canisters (Lillis et al., Figs. 1 and 9, paragraphs [0030], [0050], [0056]). In regards to claim 34, Montemayor et al. discloses a hollow central core in the spiral-shaped fuel cell (Montemayor et al., Figure 2, col. 2, lines 26-39).

### ***Conclusion***

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kaiser et al. (US Patent 6,555,262).

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas A. Smith whose telephone number is (571)-

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272-8760. The examiner can normally be reached on 8:30 AM to 5:00 PM, Monday through Friday.

19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571)-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

20. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NAS

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SUPERVISORY PATENT EXAMINER  
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